EXHIBIT AA

From: Suneel Venati [vsuneel@aristanetworks.com]
Sent: 3/4/2014 3:45:51 PM
To: Richard Whitney [rw@aristanetworks.com]
CC: Peter Rufer [prufer@aristanetworks.com]; Wyatt Sullivan [wyatt@aristanetworks.com]; Anshul Sadana [asadana@aristanetworks.com]; Nick Ciarleglio [nick@aristanetworks.com]; Vijay Kulkarni [vijayk@aristanetworks.com]; Amanda Wheaton [awheaton@aristanetworks.com]; rfe@aristanetworks.com
Subject: Re: [RFE81018] RFE: MQC-like CLI Config

I was actually saying we finalize a syntax for port-profile CLI and implement it within Qos CliPlugin. That way we can easily migrate to generic infrastructure in future without any backward compatibility issues. Implementing a generic infrastructure will still be a project by itself.
Ofcourse if we can commit resources then it's better to do it completely instead of piece meal approach.

Thanks
Suneel

On Tue, Mar 4, 2014 at 8:58 PM, Richard Whitney <rw@aristanetworks.com> wrote:
FWIW, I agree with building the underlying infrastructure to support generic profiles but just allowing QoS for now.

Richard Whitney
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On Tue, Mar 4, 2014 at 12:17 AM, Suneel Venati <vsuneel@aristanetworks.com> wrote:
A generic port-profile is a much larger project as it needs generic infrastructure and design and lots and lots of testing. May be that is the right way to go.
But if we don't have many customers looking for port-profiles and we don't have resources to do the whole project, then we could just do qos profile for now.
Or may be call it port-profile but support only Qos commands for now.

On Tue, Mar 4, 2014 at 10:10 AM, Peter Rufer <prufer@aristanetworks.com> wrote:
FYI: in cisco this is also implemented without touching Agents...
Customer probably wishes a more generic solution: a profile could encompass more than qos interface commands (in fact, potentially any command that could coexist with the same values on multiple interface instances: for example not the ip address command).
Also, if you change the profile after it was applied, then the agent needs to be updated accordingly (for all interfaces configured to inherit from that profile).
Further, this is also a way to change the defaults: if a profile is applied with, for example, "mtu 3333", and you type "mtu 4444" in interface ethX mode, then 4444 will take effect on that interface, but the moment you stop liking your 4444

mtu and do a "no mtu", that interface's mtu should return to 3333, not 1500. That is, individual profile commands can be shadowed.

Peter

On Mon, Mar 3, 2014 at 7:49 PM, Suneel Venati <vsuneel@aristanetworks.com> wrote:
There was a request for something similar earlier too. Not able to find that thread.

We should be able to support this with most of the work in CLI itself. Agents need not be aware of this behavior. I had proposed that the tx-queue cli can move to a new mode called qos-profile instead of interface mode.
Ex:
config# qos profile EBAY
config-qos-profile# tx-queue 1
config-qos-profile-txq1# bandwidth 1000
config-qos-profile-txq1# tx-queue 2
config-qos-profile-txq2# shape rate 10000
config-qos-profile-txq2# exit
config-qos-profile# exit
<profile saved>
config# int et1-24
config-int-et1-24# qos profile apply EBAY
At this point CLI will just copy the profile config to each of the interfaces.
So Qos agent and forwarding agent need not change at all and we can do this with minimal effort/testing.

ECN can also be supported with this model. May be we can add "qos trust" also to this profile.
Does this sound ok to you all?

Thanks
Suneel

On Tue, Mar 4, 2014 at 6:52 AM, Wyatt Sullivan <wyatt@aristanetworks.com> wrote:
Port profiles or config groups is a good idea, despite Rich pitching it. :) Currently we hodgepodge non-Cisco, templatable features in different ways depending on the current whim of the developer(s) writing it. Some developers do better than others, but it's definitely a place we could do better.

On Mon, Mar 3, 2014 at 6:47 PM, Richard Whitney <rw@aristanetworks.com> wrote:

Its has some good points ;-) We copy Cisco for everything else...

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On Mar 3, 2014 7:43 PM, "Anshul Sadana" <asadana@aristanetworks.com> wrote:
You haven't stopped selling JunOS, have you? ;-)

On Mon, Mar 3, 2014 at 4:03 PM, Richard Whitney <rw@aristanetworks.com> wrote:
Maybe something along the lines of JUNOS configuration groups but in an IOS hierarchy?

http://www.juniper.net/techpubs/en_US/junos13.3/topics/example/junos-software-configuration-groups-interfaces-configuring.html

Cheers,

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On Mon, Mar 3, 2014 at 6:38 PM, Amanda Wheaton <awheaton@aristanetworks.com> wrote:
Hi Vijay,

So perhaps a MQC-like config isn't the most direct way to solve their problem. For instance, as I understand it, bandwidth limits cannot be driven by a policy-map.

Taking a step back here, what eBay is trying to accomplish with this request is templatized, repeatable configurations that can be applied to a port to reduce operational complexity and error. For instance, in the example interface configuration below:

```
interface Ethernet9/1
  description tg215-e3/25/1
  mtu 9000
  speed forced 40gfull
  no switchport
  ipv6 address 2013:192:168:12:8::2/112
  ip address 192.168.12.9/31
  ip pim sparse-mode
  ip pim query-interval 60
  qos trust dscp
  tx-queue 0
    bandwidth guaranteed 8000000
  !
  tx-queue 1
    bandwidth guaranteed 400000
```

```
!
tx-queue 2
  bandwidth guaranteed 23600000
!
tx-queue 4
  bandwidth guaranteed 8000000
```

If some of this configuration could be gathered into an interface template it would make deploying as well as troubleshooting an easier process for eBay. MQC is how they are used to doing this for QoS but I think the greater functionality could be achieved by some sort of interface/QoS template. Have these ever been discussed in earnest?

Cheers,
Amanda

On Sun, Mar 2, 2014 at 8:24 PM, Vijay Kulkarni <vijayk@aristanetworks.com> wrote:
If there an example config that we can't do currently that customer is requesting that would help. BTW, N7K doesn't have qos trust for generic policy-map and the way it is retro fitted to MQC to enable per interface is very much confusing.

thanks,
Vijay.

On Mon, Mar 3, 2014 at 9:35 AM, Amanda Wheaton <awheaton@aristanetworks.com> wrote:
Correct. The specific implementation would include as much of their configuration as possible, which includes qos trust (which I believe is interface specific and cannot be driven by policy-map), remarking, and bandwidth limits on egress. I understand there may be some platform-specific limitations here but we would be looking at Arad, T+ and T2.

AW

On Sun, Mar 2, 2014 at 7:58 PM, Nick Ciarleglio <nick@aristanetworks.com> wrote:
Amanda-
We already support the MQC semantics and generic syntax you've documented below in current code. I'm assuming they are looking for more than that?
NC

On Mar 2, 2014, at 10:22 PM, Amanda Wheaton <awheaton@aristanetworks.com> wrote:
Hi Anshul,

The reason this is a somewhat generic request is because they are requesting a framework for applying QoS versus a specific QoS feature. There are a few gaps in QoS functionality but I was planning to file and track those as separate RFEs.

Yevgeniy would like to use this method for QoS implementation so that the configuration is templatized and applied to each port as a part of a policy-map versus a configuration that needs to be entered per port leading to possible errors and inconsistency.

Let me know if you'd like me to amend this.

Cheers,
Amanda

On Sun, Mar 2, 2014 at 4:36 PM, Anshul Sadana <asadana@aristanetworks.com> wrote:
Amanda, this is too generic. Turns out we already know what MQC means ;-)

What specifically do they need - policers per port? Can we get a sample config to know what do they match on. Are they looking for marking, or policing, or both?

Note that the basic structure for these is already there on some of our products. Are they looking for this qos functionality on their Tors or spines?

Anshul

> On Mar 2, 2014, at 4:00 PM, awheaton@aristanetworks.com wrote:
>
> Pending RFE81018 - RFE: MQC-like CLI Config:
>
> eBay has requested a solution to QoS configuration as opposed to per interface, such as Cisco's MQC, that makes configuration more standard and easy to apply consistently without error:
>
> 1. Define a class-map. The first step in QoS deployment is to identify the interesting traffic (ie: classify the packets). This step defines a grouping of network traffic-a class-map in MQC terminology-with various classification tools: Access Control Lists (ACLs), IP addresses, IP precedence, IP Differentiated Services Code Point (DSCP), IEEE 802.1p, MPLS EXP, and Cisco Network Based Application Recognition (NBAR).
>
> 2. Define a policy-map. Decide what to do with a group once its traffic has been identified. This step can be considered the actual construction of a QoS policy-a policy-map in MQC terminology-by choosing the group of traffic (ie: class-map) on which to perform QoS functions. Examples of QoS functions are queuing, dropping, policing, shaping, and marking.
>
> 3. Apply the policy-map. Apply the appropriate policy-map to the desired interfaces, sub-interfaces, or Asynchronous Transfer Mode (ATM) or Frame Relay Permanent Virtual Circuits (PVCs).
>
> Requested for EBay on 2014-2-24
>
> To add more customers to this request, please go to http://rfe.sjc.aristanetworks.com/rfe/81018

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